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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/540,896	03/31/2000	Shunpei Yamazaki	0756-2135	2024

22204 7590 06/05/2003

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EXAMINER

CHANG, KENT WU

ART UNIT	PAPER NUMBER
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2673

DATE MAILED: 06/05/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/540,896

Applicant(s)

YAMAZAKI ET AL.

Examiner

Kent Chang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) 12-34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2,4-7.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statements (IDS) submitted on 3/31/00, 7/18/00, 2/2/01, 4/10/01, 6/3/02 are in compliance with the provisions of 37 CFR 1.97.

Accordingly, the information disclosure statements are being considered by the examiner.

Election/Restrictions

1. Claims 12-34 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Species, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 9.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wakai et al (US 4,743,096) in view of Matsueda (JP 1-156725).

Wakai discloses a method for driving an LCD having a plurality of pixels including a signal line and switching elements, and applying pulses to the signal line at intervals of $2^{i-1}T$ (binary pulses, see column 5 lines 3-10 and Fig.8). it would have been obvious

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for one of ordinary skill in the art at the time of the invention to use the method of Wakai to driving any types of LCD including twisted nematic, super twisted nematic, Ferroelectric, antiferroelectric, dispersion, and polymer liquid crystal so as to provide gray scale image in an LCD device. Wakai is silent in using a TFT as a switching element.

Matsueda (JP 1-156725) discloses a switching element using for driving an LCD comprising a crystalline semiconductor film having silicon over a substrate with an insulating surface and a gate electrode adjacent the crystalline semiconductor film with a gate insulating film (element 44, see text under Example 1). Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to use a switching element using for driving an LCD comprising a crystalline semiconductor film having silicon over a substrate with an insulating surface and a gate electrode adjacent the crystalline semiconductor film with a gate insulating film as taught by Matsueda in the device of Wakai so as to obtain high speed of switching operation and excellent image quality as suggested by masueda.

Consider claims 5 and 10. It would have been obvious for one of ordinary skill in the art at the time of the invention to use either n-channel type or p-channel type TFT in the device of Wakai as modified since it merely depends on the availability of the TFT. Use either of them would perform equally well in driving the LCD.

Consider claim 11. It would have been obvious for one of ordinary skill in the art at the time of the invention to use a line period of less than 100 μ sec so as to reduce flickers. The driving speed of the LCD depends on the size of the display and the

elements being used. However, it is known in the art to increase the driving speed (reduce the line period) by partitioning the display device or using high speed switching elements.

CONTACT INFORMATION

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kent Chang whose telephone number is 703-305-4824. The examiner can normally be reached on Monday to Thursday from 9:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala, can be reached at 703-305-4938.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

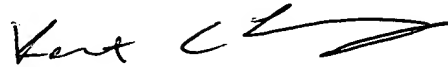
or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is 305-9700.

A handwritten signature in black ink, appearing to read "Kent Chang", with a stylized flourish extending to the right.

Kent Chang
Primary Examiner
Art Unit 2673

Kc

5/30/03